



11-13-06

11/13/06

1645

PATENT
Attorney Docket No. 040285PCTUS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of :
LeDuc, et al. : THREE-DIMENSIONAL, FLEXIBLE CELL
Art Unit: 1645 : GROWTH SUBSTRATE AND RELATED
Serial No.: 10/553,249 : METHODS

INFORMATION DISCLOSURE STATEMENT

November 9, 2006
Pittsburgh, Pennsylvania 15222

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicants, in accordance with their duty of disclosure pursuant to 37 C.F.R. § 1.56, hereby advise the United States Patent and Trademark Office of the references listed on the accompanying form PTO/SB/08A (substitute for 1449A/PTO) *Information Disclosure Statement by Applicant*. Copies of each non-U.S. Patent reference cited therein are herewith enclosed. Applicants note that although the cited references may be relevant to the examination of the above-referenced application "under 37 C.F.R. § 1.97(h), the filing of this *Information Disclosure Statement* "shall not

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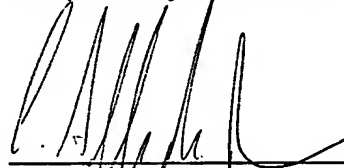
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be construed to be an admission that the information cited in the statement is, or is considered to be, material to patentability as defined in § 1.56(b)."

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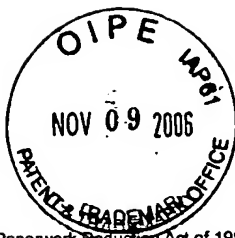
Pursuant to 37 C.F.R. § 1.97(b) (3), Applicants submit that no fee is necessary for consideration of this *Information Disclosure Statement* by Applicant. Nevertheless, the Commissioner is hereby authorized to charge any additionally required fees deemed necessary for consideration of this *Information Disclosure Statement* by Applicant to Account No. 11-1110.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'C. Allen Black, Jr.', is written over a horizontal line.

C. Allen Black, Jr.
Registration No. 53,835
Attorney for Applicants

Kirkpatrick & Lockhart Nicholson Graham LLP
Henry W. Oliver Building
535 Smithfield Street
Pittsburgh, Pennsylvania 15222-2312
Telephone: (412) 355-6319
Facsimile: (412) 355-6501
Customer No. 26285



PTO/SB/08A (08-03)

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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)		Complete if Known			
		Application Number	10/553,249		
		Filing Date	October 17, 2005		
		First Named Inventor	LeDuc, et al.		
		Art Unit	1645		
		Examiner Name	Not Yet Assigned		
Sheet	1	of	5	Attorney Docket Number	040285PCTUS

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)			
		US-4,789,601	12/06/1988	Banes	
		US-6,048,723	04/11/2000	Banes	
		US-6,037,141	03/14/2000	Banes	
		US-6,645,759 B2	11/11/2003	Banes	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				
		WO 02/35990 A2	May 10, 2002	Prodesco, Inc.		
		WO 91/19783	Dec. 26, 1991	E.I. DuPont De Nemours and Company		

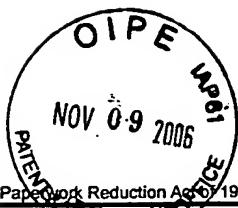
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		Application Number	10/553,249
		Filing Date	October 17, 2005
		First Named Inventor	LeDuc, et al.
		Art Unit	1645
Examiner Name	Not Yet Assigned		
Sheet 2 of 5	Attorney Docket Number	040285PCTUS	

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
		BOITANO, S., et al., <i>A Role for Ca²⁺ -Conducting Ion Channels in Mechanically-induced Signal Transduction of Airway Epithelial Cells</i> , <u>Journal of Cell Science</u> 107, pp. 3037-3044 (1994).	
		CAMARGO, M., et al., <i>Renal Hydrolysis of Absorbed Protein: Influence of Load and Lysosomal pH</i> , <u>Am J Physiol</u> 247, pp. F656-64, (1984).	
		CHAOHONG L., et al., <i>Cyclic Strain Stress-induced Mitogen-activated Protein Kinase (MAPK) Phosphatase 1 Expression in Vascular Smooth Muscle Cells is Regulated by Ras/Rac-MAPK Pathways</i> , <u>The Journal of Biological Chemistry</u> Vol. 274, No. 36, pp. 25273-25280, (1999).	
		CHESS, et al., <i>Mechanical Strain-Induced Proliferation and Signaling in Pulmonary Epithelial H441 cells</i> , <u>Am J Physiol Lung Cell Mol Physiol</u> 279, pp. L43-L51, (2000).	
		DEKKER, R., et al., <i>Prolonged Fluid Shear Stress Induces a Distinct Set of Endothelial Cell Genes, Most Specifically Lung Krüppel-like Factor (KLF2)</i> , <u>Blood</u> , 100, No. 5, pp. 1689-1698, (2002).	
		ENGSTROM K, et al., <i>Combined Use of Micropipette Aspiration and Perfusion for Studying Red Blood Cell Volume Regulation</i> , <u>Cytometry</u> 27, pp.345-352 (1997).	
		FERRER I., et al., <i>Phosphorylation-Dependent Mitogen-Activated Protein Kinase (MAPK/ERK), Stress-Activated Protein Kinase/c-Jun N-Terminal Kinase (SAPK/JNK), and p38 Kinase Expression in Parkinson's Disease and Dementia with Lewy Bodies</i> , <u>J Neural Transm</u> 108, pp. 1383-1396, (2001).	
		GARCIA-CARDENA G., et al., <i>Mechanosensitive Endothelial Gene Expression Profiles: Scripts for the Role of Hemodynamics in Atherogenesis?</i> , <u>Ann N Y Acad Sci</u> 947: 1-6, (2001).	

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		Application Number	10/553,249		
		Filing Date	October 17, 2005		
		First Named Inventor	LeDuc, et al.		
		Art Unit	1645		
Examiner Name	Not Yet Assigned				
Sheet	3	of	5	Attorney Docket Number	040285PCTUS

		HAMMERSCHMIDT, S., et al., <i>Apoptosis and Necrosis Induced by Cyclic Mechanical Stretching in Alveolar Type II Cells</i> , <u>Am J Respir Cell Mol Bio</u> 30, pp. 396-402, (2004).	
		HUSSE, B., et al., <i>Cyclical Mechanical Sstretch-induced Apoptosis in Myocytes from Young Rats but Necrosis in Myocytes from Old Rats</i> , <u>Am J Physiol Heart Circ Physiol</u> 285, pp. 1521-1527, (2003).	
		JANSSON, K., et al., <i>A Biodegradable Bovine Collagen Membrane as a Dermal Template for Human In Vivo Wound Healing</i> , <u>Scand J Plast Reconstr Surg Hand Surg</u> 35, pp. 369-75, (2001).	
		KANO, Y., et al., <i>Lateral Zone of Cell-Cell Adhesion as the Major Fluid Shear Stress-Related Signal Transduction Site</i> , <u>Circulation Research</u> , <u>Journal of the American Heart Association</u> 86; pp. 425-433, (2000).	
		LEDUC P., et al., <i>Dynamics of Individual Flexible Polymers In a Shear Flow</i> , <u>Nature</u> 399, pp. 564-566, (1999).	
		LEDUC P., et al., <i>Use of Micropatterned Adhesive Surfaces for Control of Cell Behavior</i> , <u>Methods in Cell Biology</u> 69, pp. 395-401 (2002).	
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		LIU, S., et al., <i>A Possible Role of Initial Cell Death Due to Mechanical Stretch in the Regulation of Subsequent Cell Proliferation in Experimental Vein Grafts</i> , <u>Biomech Model Mechanobiol</u> 1, pp.17-27, (2002).	
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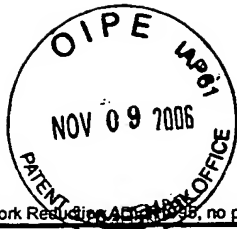
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		Application Number	10/553,249		
		Filing Date	October 17, 2005		
		First Named Inventor	LeDuc, et al.		
		Art Unit	1645		
		Examiner Name	Not Yet Assigned		
Sheet	4	of	5	Attorney Docket Number	040285PCTUS

		MATSUDA, et al., <i>Proliferation and Differentiation of Human Osteoblastic Cells Associated with Differential Activation of MAP Kinases in Response to Epidermal Growth Factor, Hypoxia, and Mechanical Stress in Vitro</i> , <u>Biochemical and Biophysical Research Communications</u> 249, pp. 350-354, (1998).	
		MEYER, et al., <i>Mechanical Control of Cyclic AMP Signalling and Gene Transcription Through Integrins</i> , <u>Nature Cell Biology</u> 2, pp. 666-668, (2000).	
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		SUMPIO, B., et al., <i>Mechanical Stress Stimulates Aortic Endothelial Cells to Proliferate</i> , <u>J Vasc Surg</u> 6, pp. 252-6 (1987).	
		TOPPER, J., et al., <i>Blood Flow and Vascular Gene Expression: Fluid Shear Stress as a Modulator of Endothelial Phenotype</i> , <u>Mol Med Today</u> 5, pp. 40-46 (1999).	
		TRUSKEY, G., et al., <i>The Effect of Fluid Shear Stress Upon Cell Adhesion to Fibronectin-treated Surfaces</i> <u>J Biomed Mater Res</u> 24, pp.1333-1353 (1990).	

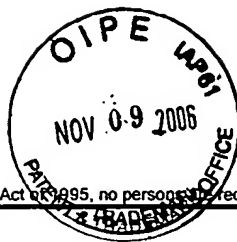
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet 5 of 5

Complete if Known

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First Named Inventor	LeDuc, et al.
Art Unit	1645
Examiner Name	Not Yet Assigned
Attorney Docket Number	040285PCTUS

		VAN KOOTEN, T., et al. <i>Fluid Shear Induced Endothelial Cell Detachment from Glass-Influence of Adhesion Time and Shear Stress</i> , <u>Med Eng Phys</u> 16, pp. 506-512 (1994).	
		WANG, J., et al., <i>Specificity of Endothelial Cell Reorientation in Response to Cyclic Mechanical Stretching</i> , <u>J Biomech</u> 34, pp.1563-1572 (2001).	
		WANG, N., et al., <i>Mechanotransduction Across the Cell Surface and Through the Cytoskeleton</i> , <u>Science</u> 260, pp. 1124-1127 (1993).	
		WANG, Y., et al., <i>A Tough Biodegradable Elastomer</i> , <u>Nature Biotechnology</u> , 20, pp. 602-606 (2002).	
		WANG, J., et al., <i>Development of Biodegradable Polyesterurethane Membranes With Different Surface Morphologies for the Culture of Osteoblasts</i> , pub. John Wiley & Sons, Inc. pp. 761-770 (2000).	
		WEYTS, F., et al., <i>Mechanical Control of Human Osteoblast Apoptosis and Proliferation in Relation to Differentiation</i> , <u>Calcif Tissue Int</u> 72, pp.505-12 (2002).	

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